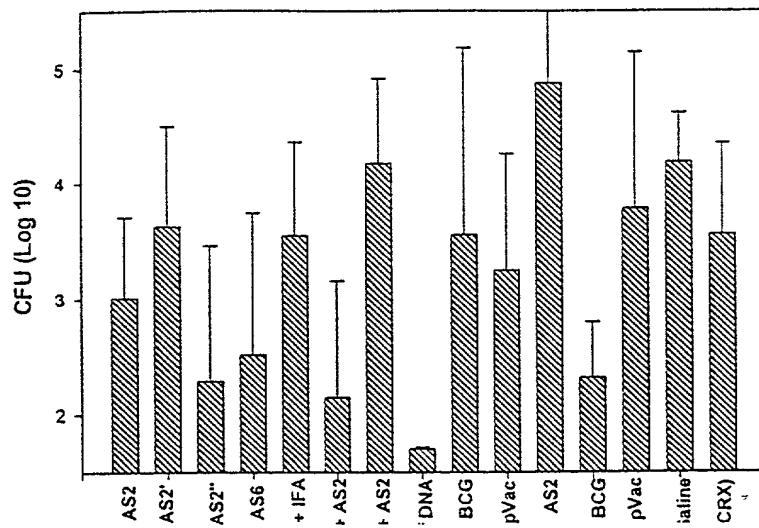


Figure 1

COR9903 (MTB72f + Adjuvant)  
SPLEEN

Fig. 2A



COR9903 (MTB72f + Adjuvant)  
Lung

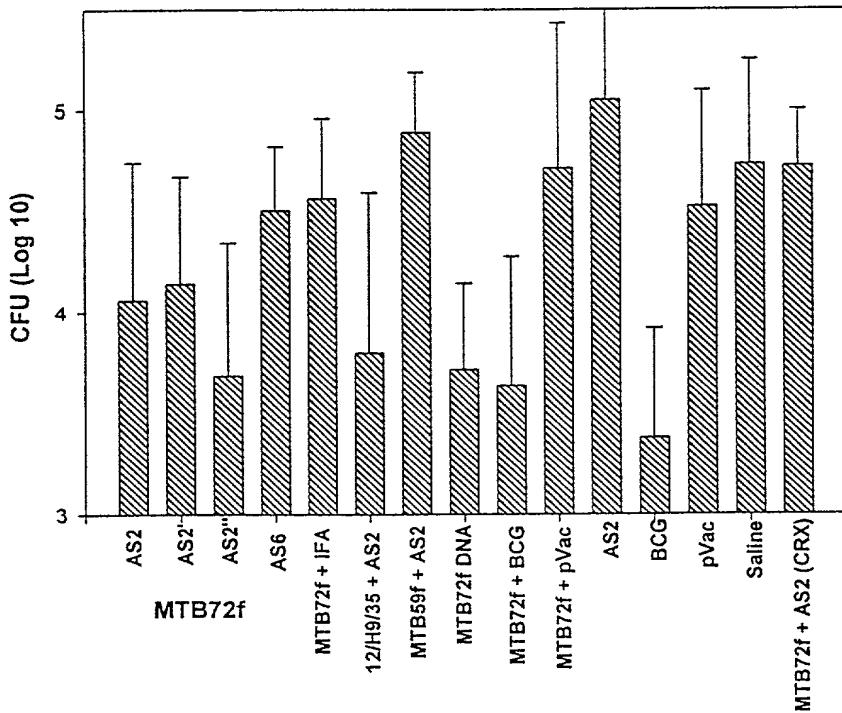
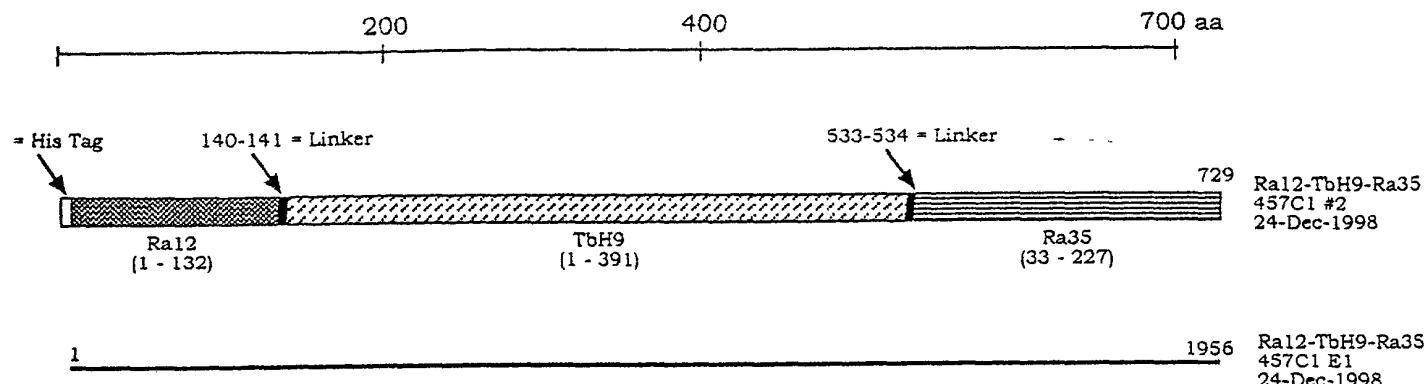


Figure 2

Ra12-TbH9-Ra35  
(MTB72f)



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Ra35 N-terminus DNA

gccccgcggg ccttgtcgca ggaccggttc gccgacttcc ccgcgcgtgcc cccgcacccg 60  
tccgcgatgg tcgcccāagt ggggccacag gtggtaaca acaacaccaa actgggctac 120  
aacaacgccc tggcgccgg gacccgcacatc gtcatcgatc ccaacgtgt cgtgctgacc 180  
aacaaccacg tgatcgccgg cgccaccgac atcaatgcgt tcagcgtcgg ctccggccaa 240  
acctacggcg tcgatgtggt cgggtatgac cgacccagg atgtcgcggt gctgcagctg 300  
cgccgtgccc gtggcctacc atcggccggc atcgggtggcg gcgtcgcgg tggtagcccc 360  
gtcgtcgca tggcaacag cgggtggcag ggccggaaacgc cccgtcgcgg gctggcagg 420  
gtggtcgcgc tcggccaaac cgtgcaggcg tcggattcgc tgaccgtgc cgaagagaca 480  
ttgaacgggt tgatccagtt cgatgcgcg atccagcccc gtgattcggg cgggccccgtc 540  
gtcaacggcc taggacaggt ggtcggtatg aacacggccg cgtcctag 588

Ra35 N-terminus amino acid sequence

Ala Pro Pro Ala Leu Ser Gln Asp Arg Phe Ala Asp Phe Pro Ala Leu  
5 10 15

Pro Leu Asp Pro Ser Ala Met Val Ala Gln Val Gly Pro Gln Val Val  
20 25 30

Asn Ile Asn Thr Lys Leu Gly Tyr Asn Asn Ala Val Gly Ala Gly Thr  
35 40 45

Gly Ile Val Ile Asp Pro Asn Gly Val Val Leu Thr Asn Asn His Val  
50 55 60

Ile Ala Gly Ala Thr Asp Ile Asn Ala Phe Ser Val Gly Ser Gly Gln  
65 70 75 80

Thr Tyr Gly Val Asp Val Val Gly Tyr Asp Arg Thr Gln Asp Val Ala  
85 90 95

Val Leu Gln Leu Arg Gly Ala Gly Gly Leu Pro Ser Ala Ala Ile Gly  
100 105 110

Gly Gly Val Ala Val Gly Glu Pro Val Val Ala Met Gly Asn Ser Gly  
115 120 125

Gly Gln Gly Gly Thr Pro Arg Ala Val Pro Gly Arg Val Val Ala Leu  
130 135 140

Gly Gln Thr Val Gln Ala Ser Asp Ser Leu Thr Gly Ala Glu Glu Thr  
145 150 155 160

Leu Asn Gly Leu Ile Gln Phe Asp Ala Ala Ile Gln Pro Gly Asp Ser  
165 170 175

Gly Gly Pro Val Val Asn Gly Leu Gly Gln Val Val Gly Met Asn Thr  
180 185 190

Ala Ala Ser  
195

Figure 4

Figure 5

Alingment of the Amino Acid Sequences of Mtb72f with the the Mutated Version, Mtb72f-mutSA. The single amino acid substitution (S to A) at position 710 is indicated (boxed)

[Ra12

1	M H H H H H H T A A S D N F Q L S Q G G Q G F A I P I G Q A M A I A G Q I R S G G G S P T V H I G P T A F L G	Mtb72f
1	M H H H H H H T A A S D N F Q L S Q G G Q G F A I P I G Q A M A I A G Q I R S G G G S P T V H I G P T A F L G	Mtb72f-mutSA
56	L G V V D N N G N G A R V Q R V V G S A P A A S L G I S T G D V I T A V D G A P I N S A T A M A D A L N G H H	Mtb72f
56	L G V V D N N G N G A R V Q R V V G S A P A A S L G I S T G D V I T A V D G A P I N S A T A M A D A L N G H H	Mtb72f-mutSA
111	P G D V I S V T W Q T K S G G T R T G N V T L A E G P P A E F M V D F G A L P P E I N S A R M Y A G P G S A S	Mtb72f
111	P G D V I S V T W Q T K S G G T R T G N V T L A E G P P A E F M V D F G A L P P E I N S A R M Y A G P G S A S	Mtb72f-mutSA
166	L V A A A Q M W D S V A S D L F S A A S A F Q S V V W G L T V G S W I G S S A G L M V A A A S P Y V A W M S V	Mtb72f
166	L V A A A Q M W D S V A S D L F S A A S A F Q S V V W G L T V G S W I G S S A G L M V A A A S P Y V A W M S V	Mtb72f-mutSA
221	T A G Q A E L T A A Q V R V A A A A Y E T A Y G L T V P P P V I A E N R A E L M I L I A T N L L G Q N T P A I	Mtb72f
221	T A G Q A E L T A A Q V R V A A A A Y E T A Y G L T V P P P V I A E N R A E L M I L I A T N L L G Q N T P A I	Mtb72f-mutSA
276	A V N E A E Y G E M W A Q D A A A M F G Y A A A T A T A T A T L L P F E E A P E M T S A G G L L E Q A A A V E	Mtb72f
276	A V N E A E Y G E M W A Q D A A A M F G Y A A A T A T A T A T L L P F E E A P E M T S A G G L L E Q A A A V E	Mtb72f-mutSA
331	E A S D T A A A N Q L M N N V P Q A L Q Q L A Q P T Q G T T P S S K L G G L W K T V S P H R S P I S N M V S M	Mtb72f
331	E A S D T A A A N Q L M N N V P Q A L Q Q L A Q P T Q G T T P S S K L G G L W K T V S P H R S P I S N M V S M	Mtb72f-mutSA
386	A N N H M S M T N S G V S M T N T L S S M L K G F A P A A A A Q A V Q T A A Q N G V R A M S S L G S S L G S S	Mtb72f
386	A N N H M S M T N S G V S M T N T L S S M L K G F A P A A A A Q A V Q T A A Q N G V R A M S S L G S S L G S S	Mtb72f-mutSA
441	G L G G G V A A N L G R A A S V G S L S V P Q A W A A A N Q A V T P A A R A L P L T S L T S A A E R G P G Q M	Mtb72f
441	G L G G G V A A N L G R A A S V G S L S V P Q A W A A A N Q A V T P A A R A L P L T S L T S A A E R G P G Q M	Mtb72f-mutSA
496	L G G L P V G Q M G A R A G G G L S G V L R V P P R P Y V M P H S P A A G D I A P P A L S Q D R F A D F P A L	Mtb72f
496	L G G L P V G Q M G A R A G G G L S G V L R V P P R P Y V M P H S P A A G D I A P P A L S Q D R F A D F P A L	Mtb72f-mutSA
551	P L D P S A M V A Q V G P Q V V N I N T K L G Y N N A V G A G T G I V I D P N G V V L T N N H V I A G A T D I	Mtb72f
551	P L D P S A M V A Q V G P Q V V N I N T K L G Y N N A V G A G T G I V I D P N G V V L T N N H V I A G A T D I	Mtb72f-mutSA
606	N A F S V G S G Q T Y G V D V V G Y D R T Q D V A V L Q L R G A G G L P S A A I G G G V A V G E P V V A M G N	Mtb72f
606	N A F S V G S G Q T Y G V D V V G Y D R T Q D V A V L Q L R G A G G L P S A A I G G G V A V G E P V V A M G N	Mtb72f-mutSA
661	S G G Q G G G T P R A V P G R V V V A L G Q T V Q A S D S L T G A E E T L N G L I Q F D A A I Q P G D S G G P V V	Mtb72f
661	S G G Q G G G T P R A V P G R V V V A L G Q T V Q A S D S L T G A E E T L N G L I Q F D A A I Q P G D A G G P V V	Mtb72f-mutSA
716	N G L G Q V V G M N T A A S	Mtb72f
716	N G L G Q V V G M N T A A S	Mtb72f-mutSA

[Ra35

Figure 6

Alignment of the Amino Acid Sequences of the mature form of Ra35 (Mtb32A) with the mutated version, Ra35 mutSA. The single amino acid substitution (S to A) at position 183 is indicated (boxed)

1 M H H H H H H A P P A L S Q D R F A D F P A L P L D P S A M V A Q V G P Q V V N I N T K L G Y N N A T b R a 3 5 \_ m a t  
1 M H H H H H H A P P A L S Q D R F A D F P A L P L D P S A M V A Q V G P Q V V N I N T K L G Y N N A T b R a 3 5 \_ m u t S A

51 V G A G T G I V I D P N G V V L T N N H V I A G A T D I N A F S V G S G Q T Y G V D V V G Y D R T Q T b R a 3 5 \_ m a t  
51 V G A G T G I V I D P N G V V L T N N H V I A G A T D I N A F S V G S G Q T Y G V D V V G Y D R T Q T b R a 3 5 \_ m u t S A

101 D V A V L Q L R G A G G L P S A A I G G G V A V G E P V V A M G N S G G Q G G T P R A V P G R V V A T b R a 3 5 \_ m a t  
101 D V A V L Q L R G A G G L P S A A I G G G V A V G E P V V A M G N S G G Q G G T P R A V P G R V V A T b R a 3 5 \_ m u t S A

151 L G Q T V Q A S D S L T G A E E T L N G L I Q F D A A I Q P G D S G G P V V N G L G Q V V G M N T A T b R a 3 5 \_ m a t  
151 L G Q T V Q A S D S L T G A E E T L N G L I Q F D A A I Q P G D A G G P V V N G L G Q V V G M N T A T b R a 3 5 \_ m u t S A

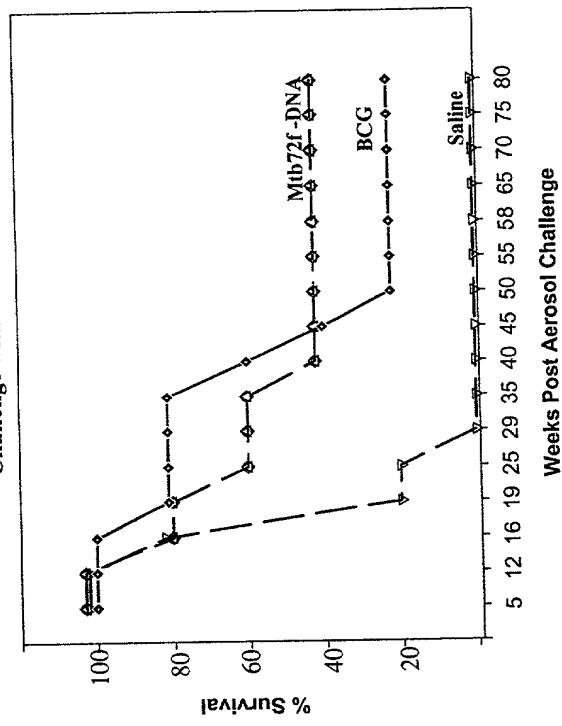
201 A S D N F Q L S Q G G Q G F A I P I G Q A M A I A G Q I R S G G G S P T V H I G P T A F L G L G V V T b R a 3 5 \_ m a t  
201 A S D N F Q L S Q G G Q G F A I P I G Q A M A I A G Q I R S G G G S P T V H I G P T A F L G L G V V T b R a 3 5 \_ m u t S A

251 D N N G N G A R V Q R V V G S A P A A S L G I S T G D V I T A V D G A P I N S A T A M A D A L N G H T b R a 3 5 \_ m a t  
251 D N N G N G A R V Q R V V G S A P A A S L G I S T G D V I T A V D G A P I N S A T A M A D A L N G H T b R a 3 5 \_ m u t S A

301 H P G D V I S V T W Q T K S G G T R T G N V T L A E G P P A ] end Ra12 T b R a 3 5 \_ m a t  
301 H P G D V I S V T W Q T K S G G T R T G N V T L A E G P P A ] end Ra12 T b R a 3 5 \_ m u t S A

end Ra35 Nterm

Mtb72f-DNA Protects Guinea Pigs against Aerosol Challenge with Virulent TB



Mtb72f Formulated in BCG Protects Guinea Pigs Against Aerosol Challenge With Virulent TB

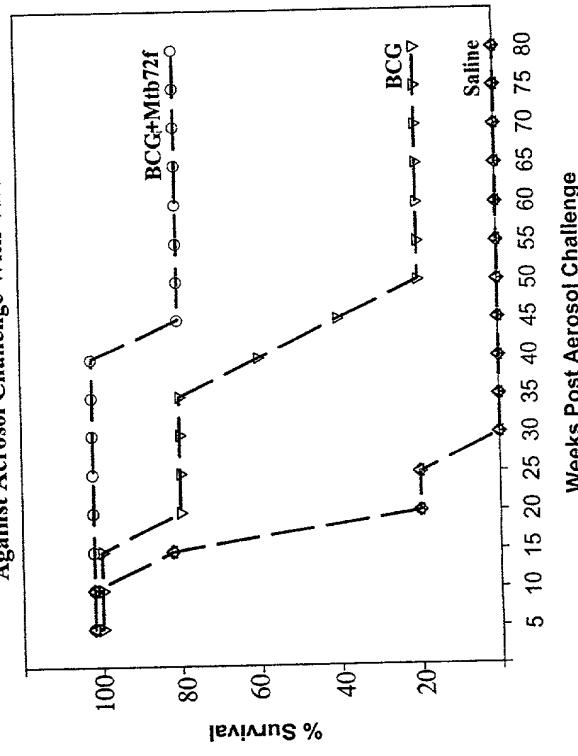


Figure 7